

COPPER MINERALIZATION AND SUPERGENE ALTERATION IN BASIC LAVAS FROM PARANÁ BASIN - PIQUIRÍ VALLEY - BRAZIL

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To the north of the Rio Piquiri alignment and 20Km to the south-east of Campina da Lagoa city (Paraná, State) occurs a basaltic lava flow, brecciated and vesicular, with low-Ti content ($\text{TiO}_2\%$) herein named D2. Mineralogy has been determined through conventional microscope, electron microprobe and X-ray diffractometer. Primary copper and cuprite-native mineralization fill thermal contraction joint that occur below the amygdaloidal portion of the flow. Secondly, the mineralization are composed of tenorite, crysocola, azurite, analcime, alunite, linzardite and nepouite. The distribution of these minerals allows their subdivision into five Zones which correspond to their crystallization order. The Metallic Zone comprises the native copper and copper oxides occurrences. The Metallic Zone I is represented by native copper with 100% Cu. In the Metallic Zone II occurs cuprite with 88% Cu, representing the oxidation of the native copper during the final phase of its crystallization, as evidenced in back scattered image by the presence of corroded rims on the native copper. The Metallic Zone III contains tenorite with 78% Cu, which resulted from the leaching and precipitation of the copper during the Silicated Zone formation. The Silicated Zones is formed by crysocola and zeolites, the former originated from the increase of Si in the solution that has leached Cu from the native copper. The Carbonated Zone is constituted by azurite and less abundant calcite. The identification of alunite by X-ray diffraction from samples of the Silicated Zone, suggests a supergene origin for this hidrothermal zone.